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ABSTRACT

Among the more recent personality assessment tools used by counseling psychologists is Millon's Clinical Multiaxial Inventory (MCMI). This instrument was created, in part, to reflect the changes that had occurred in psychologists' understanding of personality, psychopathology, and diagnostic assessment. The MCMI is derived from Millon's biosocial learning theory of personality. Millon's personality theory is built upon a cross-matrix of four basic personality patterns with an active/passive dimension. The two sets of theoretical variables give rise to what is defined and quantified as the eight basic personality pattern scales on the MCMI. Although there is literature addressing the factor structure of the MCMI items, there is none addressing the theoretical structure presumed to underlie the scales of the instrument. This study tested Millon's theoretical framework and model of personality against actual MCMI scale data. The results of this study were clearly unsupportive of the basic personality scales of the MCMI as representing the latent biosocial personality structure proposed by Millon. The findings do not, however, mitigate against use of the MCMI as a clinical diagnostic tool. Five tables and two graphs illustrate findings. Contains 17 references. (LSR)

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Running head: Latent structure of the MCMI

The latent personality structure of the Millon Clinical Multiaxial Inventory

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Abstract

We investigated whether the MCMI basic personality pattern scales reflect the cohesive theoretical framework of personality claimed by Millon. Millon's personality theory is built upon a cross-matrix of four basic personality patterns with an active/passive dimension. The two sets of theoretical variables gives rise to what is defined and quantified as the eight basic personality pattern scales on the MCMI. Although there is literature addressing the factor structure of the MCMI items, there is none addressing the theoretical structure presumed to underlie the scales of the instrument. This study tested Millon's theoretical framework and model of personality against actual MCMI scale data. Confirmatory factor analyses yielded unacceptable fit index values, suggesting that the hypothesized model generated by the MCMI (and MCMI-II) data was not consistent with Millon's theorized model.

The latent personality structure of the Millon Clinical Multiaxial Inventory

Among the more recent personality assessment tools used by counseling psychologists is Millon's (1983) Clinical Multiaxial Inventory (MCMI). This instrument, created in part in response to a then aging MMPI (Buros, 1970; Hathaway, 1972), was in an attempt to develop an instrument that reflected the changes that had occurred in psychologists' understanding of personality, psychopathology, and in diagnostic assessment over the preceding 30 years. In specific contrast to the MMPI, the MCMI incorporates a key feature which Millon deemed essential to a modern psychometric instrument--that being derivation from a theory or model of personality. In this regard, the MCMI (and its subsequent revisions) represents Millon's conception of the contemporary psychometric instrument for the assessment of personality--the reflection of a theoretical definition and organization of psychopathology. Commenting in the MCMI manual on the background of the instrument, Millon (1983) states:

> Each of its twenty clinical scales was constructed as an operational measure of a syndrome derived from a theory of personality and psychopathology (Millon, 1969, 1981). As such, the scales and profiles of the MCMI measure theory derived variables directly and quantifiably. Since these variables are anchored to a broad-based and systematic theory, they suggest specific patient diagnoses and clinical dynamics, as well as testable hypotheses about social history and current behavior. (p. xx)

The specific theory or model of personality from which the MCMI was derived is Millon's biosocial learning theory of personality (Millon, 1969). Millon's theory of personality (Millon, 1973; Millon & Millon, 1974) distinguishes between (a) the manner in which people seek to achieve gratification or reinforcement (coping patterns) and (b) basic personality patterns. Millon identifies two coping patterns--an active pattern and a passive pattern. "Active" individuals are characterized by alertness, vigilance, persistence, decisiveness and general ambition; they tend to be the planners, strategists and manipulators. Passive individuals are best

characterized by a seeming listless approach to life. They often seem inert, resigned and in general display little ambition--as though they are waiting for life to come to them.

With this bipolar (active-passive) dimension as the anchoring point for his theoretical structure, Millon further identifies four basic personality *patterns*. The first pattern is the dependent personality. These people operate in a manner which indicates their expectation that others will provide for their needs. The second pattern is the independent personality. The independent person is one who can be said to be self-reliant. These individuals look to their own resources before seeking resources from others. The third pattern is the ambivalent personality. Not surprisingly, these individuals display a good deal of conflict and unrest. In most instances the ambivalent person will adopt a basic stance of dependence or independence. However, when the person is subjected to stress, this conflict emerges in a pattern of volatile fluctuation and uncertainty. The fourth pattern is the detached personality. These individuals will most often appear isolated and alienated. They have a diminished capacity to experience pleasure or gratification, and are usually very sensitive to psychological anguish and hurt.

The cross-matrix of these four personality patterns with the active/passive (coping strategy) dimension is the theoretical source of the basic personality categories within Millon's biosocial learning theory, and their interaction gives rise to what is defined and quantified as the eight basic personality pattern scales on the MCMI/MCMI-II (see Figure 1). That is to say, the biosocial theory of personality forms the construct network from which the MCMI scales were derived.

Insert Figure 1 about here

Although the MCMI consists of 20 clinical scales, the basic personality pattern scales (the first eight MCMI scales) are the most directly linked to Millon's personality framework, while the remaining scales are more aligned to specific notions of psychopathology (and as such, are not as clearly and directly reflective of Millon's theory of personality). [The MCMI-II consists of 22 scales--scales 1-5, 6A, 7 and 8A being the basic personality scales.]

In light of the above background on the intent and development of the MCMI, it seems reasonable to conceptualize the basic personality pattern scales as reflecting Millon's theoretical framework for personality (i.e., the interrelation of Millon's biosocial factors). Within this framework, each of the individual basic personality pattern scales becomes a related pattern of variables circumscribed and defined by homogeneity from within and heterogeneity from without. That is, one would expect the basic elements of each scale, in general, to be more closely linked to each other than to any other of the defined scales. However, one would also expect the eight scales, comprising the basic personality patterns, taken as a whole, to reflect the underlying (latent) patterns presupposed within Millon's biosocial learning theory of personality.

Although there is literature which addresses the factor structure of the MCMI in terms of the items and distinctive scales comprising the instrument (e.g., Choca, Peterson, & Shanley, 1986; Flynn & McMahon, 1984; Lorr, 1993; Millon, 1983), no literature appears to exist which addresses the validity of the MCMI in terms of the theoretical structure which is presumed to underlie it. It was the intent of this study to address this issue. Specifically, this study sought to determine whether the MCMI basic personality pattern scales are indeed reflective of a cohesive theoretical framework, specifically Millon's biosocial learning theory of personality. The study used confirmatory factor analysis (**EQS**; Bentler & Wu, 1995) to address this question.

Method

Hypothesis and Design

The eight basic personality scales of the MCMI (and later, the MCMI-II) were analyzed within the context of Millon's (1983) presumed (latent) biosocial theoretical structure. The study tested a latent variable structure reflective of Millon's biosocial theory of personality against an observed variable structure defined by the eight basic personality scales of the MCMI. The general hypothesis of the study was that the latent theoretical structure and the observed (measured) structure would exhibit a variable relationship pattern congruent with and reflective of Millon's biosocial theory of personality. Figure 2 is a graphic representation of the structural model tested in this study.

Insert Figure 2 about here

Sample

The data used in the testing of the structural model were taken from the MCMI-II manual (Millon, 1987). Raw scores from 978 MCMI profiles were utilized to calculate the intercorrelation matrix of the eight basic personality scales (see Table 1). Of the subjects, 682 were male and 296 were female. A second sample (N=859) of MCMI-II profiles (using the appropriate scales) was used in a second analysis (see Table 2). It is important to note that although the standardization data for both the MCMI and MCMI-II have shown that men and women respond differently to the test (Cantrell & Dana, 1987; Choca, Shanley, & Van Denburg, 1991; Piersma, 1986), in the context of theoretical structure, Millon makes no distinctions with regard to his hypothesized personality structure across gender.

Insert Tables 1 and 2 about here

Analysis

A confirmatory factor analysis using maximum likelihood procedures was used to test Millon's structural model of personality . The hypothesized model (Figure 2) was conceptualized and tested as consisting of two independent factors (passive, active) and four pairs of correlated errors (the four personality patterns: detached, dependent, independent, ambivalent) (see Figure 3). Treatment of the four personality patterns as pairs of correlated errors was a methodological decision necessitated by the "underidentification" of the personality patterns--each being specified by only two MCMI scales.

Results

The results of the confirmatory factor analysis yielded unacceptable fit index values, suggesting that the hypothesized model generated by the MCMI data was not consistent with Millon's theorized model (see Table 3). Specifically, the Chi square index indicated that

significant differences existed between Millon's model and the model generated by the MCMI data, $\chi^2(16, N=978) = 3304.25$, $p<.001$. Furthermore, the normed fit index (NFI) of .495, non-normed fit index of .116, and the comparative fit index of .495 also supported the inadequacy of Millon's theorized model--at least as pertains to MCMI data. The same lack of fit to Millon's model was true of the MCMI-II data: $\chi^2(16, N=859)=1908.29$, $p<.001$; NFI=.504; non-normed fit index = .113; CFI = .505.

Insert Table 3 about here

Although the interrelationships among the eight MCMI basic personality scales failed to reflect the personality structure proposed by Millon, this did not mean that some other reasonable personality structure might not be defined by these scales. In order to explore the possibility of such an alternative structure, an exploratory factor analysis was conducted separately on the MCMI and MCMI scale data. Using a principle components approach with a VARIMAX rotation and specifying the factor extraction criterion of eigenvalues greater than 1.0, a three factor solution was identified that accounted for 85% of the variance among the eight MCMI basic personality scales. The same procedure using data from the MCMI-II produced a three-factor structure that accounted for 77% of the variance among the eight MCMI-II basic personality scales. Table 4 presents the rotated factor matrices for the MCMI and MCMI-II basic personality scales.

Insert Table 4 about here

The scale loadings were not consistent between the MCMI and MCMI-II did not appear to reveal a pattern suggestive of a coherent or especially meaningful structure of personality--nor one that could be reasonably understood in terms of the latent model proposed by Millon (however, see Retzlaff & Gibertini (1987).

Discussion

The results of this study were clearly unsupportive of the basic personality scales of the MCMI as representing the latent biosocial personality structure proposed by Millon. The findings do not, however, mitigate against use of the MCMI as a clinical diagnostic tool. There is ample evidence attesting to the validity of the instrument as a useful measure of personality and psychopathology (see Craig, 1993a; Craig, 1993b; Choca, Shanley & Van Dendburg, 1991). Instead, the findings of the present study simply call into question reasonableness of claiming or assuming the instrument as a valid operationalization or reflection of the biosocial model of personality upon which the MCMI was built. Similarly, the present results do not necessarily undermine Millon's underlying theory of personality. Conceptually, Millon's notions regarding personality and its structure seem plausible, and they provide a reasonable and credible model for understanding personality and psychopathology for a good many practitioners.

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Table 1

MCMI Basic Personality Scale Intercorrelation Matrices

MCMI	Scale 1 Schizoid	Scale 2 Avoidant	Scale 3 Dependent	Scale 4 Histrionic	Scale 5 Narcissistic	Scale 6 Antisocial	Scale 7 Compulsive	Scale 8 Pass-Aggr.
Schizoid	1.00							
Avoidant	.76	1.00						
Dependent	.40	.59	1.00					
Histrionic	-.57	-.51	-.21	1.00				
Narcissistic	-.51	-.48	-.43	.66	1.00			
Antisocial	-.16	-.14	-.51	.34	.71	1.00		
Compulsive	-.27	-.49	-.16	-.19	.03	-.23	1.00	
Pass-Aggr.	.41	.70	.37	.09	-.17	.17	-.78	1.00

Table 2

MCMI-II Basic Personality Scale Intercorrelation Matrices

MCMI-II	Scale 1 Schizoid	Scale 2 Avoidant	Scale 3 Dependent	Scale 4 Histrionic	Scale 5 Narcissistic	Scale 6A Antisocial	Scale 7 Compulsive	Scale 8A Pass-Aggr.
Schizoid	1.00							
Avoidant	.62	1.00						
Dependent	.27	.34	1.00					
Histrionic	-.59	-.29	-.11	1.00				
Narcissistic	-.35	-.22	-.41	.69	1.00			
Antisocial	-.12	.18	-.34	.48	.65	1.00		
Compulsive	.23	-.09	.16	-.29	-.05	-.27	1.00	
Pass-Aggr.	.15	.58	.04	.26	.34	.66	-.30	1.00

Table 3

Indices of "Fit" Between the Proposed Structural Model of the MCMI (the Presumed Latent Biosocial Theoretical Structure) and the Observed Variable Structure Defined by the Eight Basic Personality Scales of the MCMI.

Instrument	χ^2	df	N	Normed Fit Index	Non-Normed Fit Index	Comparative Fit Index
MCMI	3304.25*	16	978	.495	.116	.495
MCMI-II	1908.29*	16	859	.504	.113	.505

* $p < .001$

Table 4

Rotated Factor Matrices for MCMI and MCMI-II

MCMI scale	FACTOR 1	FACTOR 2	FACTOR 3
MCMI			
8. Passive-Aggressive	.94446		
7. Compulsive	-.88926		
2. Avoidant	.67149	.63226	
4. Histrionic		-.91723	
1. Schizoid		.79443	
6. Antisocial			.90846
3. Dependent			-.77112
5. Narcissistic		-.60601	.65369
MCMI-II	**FACTOR 1**	**FACTOR 2**	**FACTOR 3**
5. Narcissistic	.90477		
6A. Antisocial	.77209		
3. Dependent	-.63583		
2. Avoidant		.91134	
8A. Passive-Aggressive		.79188	
1. Schizoid		.64304	-.55071
7. Compulsive			-.83227
4. Histrionic	.57424		.62365

Figure 1

Millon's personality classification schema and associated MCMI/MCMI-II basic personality scales

Coping Styles	Personality Pattern: Dependent	Independent	Ambivalent	Detached
Passive	MCMI Scale 3 Dependent Personality	MCMI Scale 5 Narcissistic Personality	MCMI Scale 7 Compulsive Personality	MCMI Scale 1 Schizoid Personality
Active	MCMI Scale 4 Histrionic Personality	MCMI Scale 6/6A Antisocial Personality	MCMI Scale 8/8A Passive-Aggressive Personality	MCMI Scale 2 Avoidant Personality

Figure 2
Hypothesized Latent Factor Structure Model of the MCMI Basic Personality Scales.

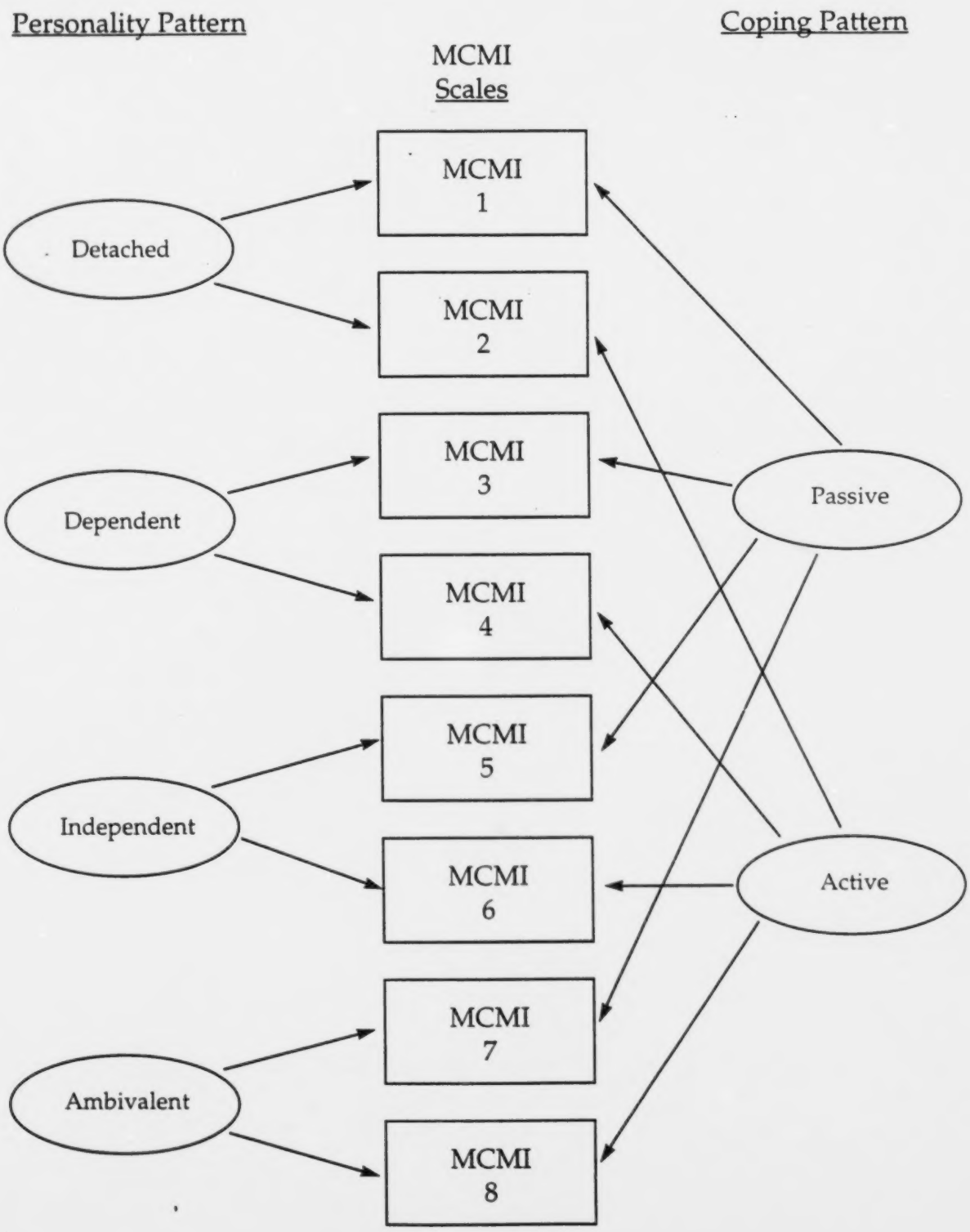

Figure 3
Tested Latent Personality Factor Structure Model of MCMI.